

Appl. No.: 09/819,947

• Amendment Dated: 3/27/01

• Reply to OA of 9/21/2004

AMENDMENT TO THE CLAIMS

The listing of the claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS

Please amend the claims as follows:

- 1 1. (Original) A method for wirelessly transmitting data between a plurality of
- 2 subscriber units and a base transceiver station, the method comprising:
- 3 at least one subscriber unit transmitting a request to send data blocks to the base
- 4 transceiver station, the request including a data transmission queue size value;
- 5 updating at the base transceiver station, a base user queue size estimate that
- 6 corresponds to the one subscriber unit that transmitted the request to send data, the base
- 7 user queue size estimate being based upon the data transmission queue size value;
- 8 the base transceiver station generating a schedule that includes time slots and
- 9 frequency blocks in which the requested data blocks are to be transmitted from the one
- 10 subscriber unit to the base transceiver station;
- 11 the at least one subscriber unit transmitting the data blocks the at least one
- 12 subscriber unit requested to send according to the schedule, each transmitted data block
- 13 comprising encoded information representing a current data transmission queue size
- 14 value;

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15 updating the base user queue size estimate based upon the encoded information;
16 and
17 the base user queue size estimate influencing future schedules generated by the
18 base transceiver station.

1 2. (Original) The method for wirelessly transmitting data between a plurality of
2 subscriber units and a base transceiver station of claim 1, wherein:
3 the request to send data is transmitted during a contention slot indicated within a
4 schedule previously transmitted by the base transceiver station.

1 3. (Original) The method for wirelessly transmitting data between a plurality of
2 subscriber units and a base transceiver station of claim 1, wherein:
3 the data blocks comprise at least portion of a data unit, and each data unit
4 comprises encoded information representing the current data transmission queue
5 size value.

1 4. (Original) The method for wirelessly transmitting data between a plurality of
2 subscriber units and a base transceiver station of claim 3, wherein the number of
3 data units within each data block is dependent on a transmission mode.

1 5. (Original) The method for wirelessly transmitting data between a plurality of
2 subscriber units and a base transceiver station of claim 3, wherein encoded
3 information comprises:
4 encoding the information within a plurality of bits within headers of the
5 data units.

1 6. (Original) The method for wirelessly transmitting data between a plurality of
2 subscriber units and a base transceiver station of claim 4, wherein encoding the
3 information comprises:
4 calculating a number of data blocks to be transmitted, the number of data
5 blocks being dependent upon the transmission mode and the current data
6 transmission queue value.

1 7. (Original) The method for wirelessly transmitting data between a plurality of
2 subscriber units and a base transceiver station of claim 6, wherein the number of
3 data blocks is encoded within a plurality of bits within headers of the data units.

1 8. (Original) The method for wirelessly transmitting data between a plurality of
2 subscriber units and a base transceiver station of claim 7, wherein a range of data
3 blocks is encoded with the plurality of bits of headers of the data units.

1 9. (Withdrawn) The method for wirelessly transmitting data between a plurality of
2 subscriber units and a base transceiver station of claim 8, wherein the range is
3 determined through a look up table depending upon the number of data blocks.

1 10. (Original) The method for wirelessly transmitting data between a plurality of
2 subscriber units and a base transceiver station of claim 6, wherein the generated
3 schedule includes a finite number of time slots that in combination form a frame,
4 and the transmission mode can change from frame to frame.

1 11. (Original) The method for wirelessly transmitting data between a plurality of
2 subscriber units and a base transceiver station of claim 1, wherein updating the
3 base user queue size estimate comprises:
4 decoding received data blocks to determine the current data transmission
5 queue value.

1 12. (Original) The method for wirelessly transmitting data between a plurality of
2 subscriber units and a base transceiver station of claim 1, wherein updating the
3 base user queue size estimate comprises:
4 decoding received data units to determine the current data transmission
5 queue value, each data block comprising at least a portion of one of the data units .

1 13. (Original) The method for wirelessly transmitting data between a plurality of
2 subscriber units and a base transceiver station of claim 12, wherein decoding
3 received data units comprises:
4 receiving a number that represents a number of data blocks to be
5 transferred.

1 14. (Original) The method for wirelessly transmitting data between a plurality of
2 subscriber units and a base transceiver station of claim 12, wherein decoding
3 received data units comprises:
4 receiving a range of data blocks;
5 determining the current data transmission queue depending upon the
6 received range and an up-link transmission mode.

1 15. (Original) The method for wirelessly transmitting data between a plurality of
2 subscriber units and a base transceiver station of claim 14, wherein the range is
3 decoded from a plurality of bits located within headers of the data units.

1 16. (Original) The method for wirelessly transmitting data between a plurality of
2 subscriber units and a base transceiver station of claim 14, wherein determining the
3 current data transmission queue comprises:
4 estimating a level of up-link traffic;

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5 determining the current data transmission queue based upon the range and
6 the level of the up-link traffic.

1 17. (Original) The method for wirelessly transmitting data between a plurality of
2 subscriber units and a base transceiver station of claim 1, wherein the scheduling
3 includes generating a map, the map depicting time slots and frequency blocks that
4 are designated for the transmission of information between the base transceiver
5 station and the one subscriber unit, the scheduling being influenced by the base
6 user queue size value.

1 18. (Original) The method for wirelessly transmitting data between a plurality of
2 subscriber units and a base transceiver station of claim 17, wherein the map
3 includes down link transmission from the base transceiver station to the one
4 subscriber unit, and up link transmission from the one subscriber unit to the base
5 transceiver station.

1 19. (Original) The method for wirelessly transmitting data between a plurality of
2 subscriber units and a base transceiver station of claim 17, wherein the map is
3 transmitted to the plurality of subscriber units once per frame of time.

1 20. (Original) The method for wirelessly transmitting data between a plurality of
2 subscriber units and a base transceiver station of claim 17, wherein the map
3 includes time slots and frequency blocks for down link transmission from the base
4 transceiver station to each of the plurality of subscriber units, and time slots and
5 frequency blocks for up link transmission from each of the plurality of subscriber
6 units to the base transceiver station.

1 21. (Original) A method for wirelessly transmitting data between a transmitter and
2 a receiver, the method comprising:
3 updating at the receiver, a receiver user queue size estimate that corresponds to the
4 transmitter that transmitted a request to send data blocks, the receiver user queue size
5 estimate being based upon a data transmission queue size value of the transmitter;
6 the transmitter generating a schedule that includes time slots and frequency blocks
7 in which the requested data blocks are to be transmitted from the transmitter to the
8 receiver;
9 the transmitter transmitting the data blocks the transmitter requested to send
10 according to the schedule, each transmitted data block comprising encoded information
11 representing a current data transmission queue size value;
12 updating the receiver user queue size estimate based upon the encoded
13 information; and

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14 the receiver user queue size estimate influencing future schedules generated by the
15 transmitter.

1 22. (Original) The method for wirelessly transmitting data between a transmitter
2 and a receiver, of claim 21, wherein:
3 the data blocks comprise at least portion of a data unit, and each data unit
4 comprises encoded information representing the current data transmission queue
5 value.

1 23. (Original) The method for wirelessly transmitting data between a transmitter
2 and a receiver, of claim 22, wherein the number of data units within each data
3 block is dependent on a transmission mode.

1 24. (Original) The method for wirelessly transmitting data between a transmitter
2 and a receiver, of claim 21, wherein encoded information comprises:
3 encoding the information within a plurality of bits within headers of the
4 data units.

1 25. (Original) The method for wirelessly transmitting data between a transmitter
2 and a receiver, of claim 22, wherein encoding the information comprises:

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3 calculating a number of data blocks to be transmitted, the number of data
4 blocks being dependent upon the transmission mode and the current data
5 transmission queue value.

1 26. (Original) The method for wirelessly transmitting data between a transmitter
2 and a receiver, of claim 24, wherein a range of data blocks is encoded with the
3 plurality of bits of the headers of the data units.

1 27. (Original) The method for wirelessly transmitting data between a transmitter
2 and a receiver, of claim 21, wherein updating the base user queue size estimate
3 comprises:
4 decoding received data units to determine the current data transmission
5 queue value, each data block comprising at least a portion of one of the data units .

1 28. (Original) The method for wirelessly transmitting data between a transmitter
2 and a receiver, of claim 27, wherein decoding received data units comprises:
3 receiving a range of data blocks;
4 determining the current data transmission queue depending upon the
5 received range and an up-link transmission mode.

1 29. (Original) The method for wirelessly transmitting data between a plurality of
2 subscriber units and a base transceiver station of claim 28, wherein determining the
3 current data transmission queue comprises:
4 estimating a level of up-link traffic;
5 determining the current data transmission queue based upon the range and the level of the
6 up-link traffic.

1 30. (Original) A method for wirelessly receiving information from a transmit unit,
2 the method comprising:
3 receiving a request to send data blocks from the transmit unit, the request
4 including a data transmission queue size;
5 updating a user queue size based upon the data transmission queue size;
6 generating a schedule that includes time slots and frequency blocks in
7 which the requested data blocks are to be transmitted;
8 receiving the requested data blocks according to the schedule, each transmitted
9 data block comprising encoded information representing a current data transmission queue
10 value;
11 updating the user queue size estimate based upon the encoded information; and
12 the user queue size estimate influencing the generation of the next schedule.

1 31. (Original) The method for wirelessly receiving information from a transmit
2 unit of claim 30, wherein updating the base user queue size estimate comprises:
3 decoding received data units to determine the current data transmission
4 queue value, each data block comprising at least a portion of one of the data units.

1 32. (Original) The method for wirelessly receiving information from a transmit
2 unit of claim 31, wherein decoding received data units comprises:
3 receiving a range of data blocks;
4 determining the current data transmission queue depending upon the
5 received range and an up-link transmission mode.

1 33. (Original) The method for wirelessly receiving information from a transmit
2 unit of claim 32, wherein determining the current data transmission queue
3 comprises:
4 estimating a level of up-link traffic;
5 determining the current data transmission queue based upon the range and
6 the level of the up-link traffic.

1 34. (Original) A method for wirelessly transmitting information from a transmit
2 unit, the method comprising:

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3 the transmit unit transmitting a request to send data blocks to a receiver unit, the
4 request including a data transmission queue size value;
5 receiving a schedule in which the data blocks are to be transmitted;
6 the transmit unit transmitting the requested data blocks according to the schedule,
7 each transmitted data block comprising encoded information representing a current data
8 transmission queue value; wherein
9 the current data transmission queue value influences the next schedule generated
10 by the base transceiver station.

1 35. (Original) The method for wirelessly transmitting information from a transmit
2 unit of claim 34, wherein the request to send data is transmitted during a
3 contention slot indicated within a schedule previously transmitted by the base
4 transceiver station.

1 36. (Original) The method for wirelessly transmitting information from a transmit
2 unit of claim 34, wherein the data blocks comprise at least portion of a data unit,
3 and each data unit comprises encoded information representing the current data
4 transmission queue size value.

1 37. (Original) The method for wirelessly transmitting information from a transmit
2 unit of claim 36, wherein the number of data units within each data block is
3 dependent on a transmission mode.

1 38. (Original) The method for wirelessly transmitting information from a transmit
2 unit of claim 37, wherein encoding the information comprises:
3 calculating a number of data blocks to be transmitted, the number of data
4 blocks being dependent upon the transmission mode and the current data
5 transmission queue value.

1 39. (Original) The method for wirelessly transmitting information from a transmit
2 unit of claim 38, wherein the number of data blocks is encoded within a plurality
3 of bits within headers of the data units.

1 40. (Original) The method for wirelessly transmitting information from a transmit
2 unit of claim 39, wherein a range of data blocks is encoded with the plurality of
3 bits of headers of the data units.

1 41. (Original) A system for wirelessly transmitting data between a plurality of
2 subscriber units and a base transceiver station, the system comprising:

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3 at least one subscriber unit transmitting a request to send data blocks to the base
4 transceiver station, the request including a data transmission queue size value;
5 means for updating at the base transceiver station, a base user queue size estimate
6 that corresponds to the one subscriber unit that transmitted the request to send data, the
7 base user queue size estimate being based upon the data transmission queue size value;
8 means for generating a schedule that includes time slots and frequency blocks in
9 which the requested data blocks are to be transmitted from the one subscriber unit to the
10 base transceiver station;
11 the one subscriber unit transmitting the data blocks the one subscriber unit
12 requested to send according to the schedule, each transmitted data block comprising
13 encoded information representing a current data transmission queue size value;
14 means for updating the base user queue size estimate based upon the encoded
15 information; wherein
16 the base user queue size estimate influencing future schedules generated by the
17 base transceiver station.